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# Cerylonidae (Coleoptera, Cucujoidea) of Pakistan

by

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With 28 figures

## ABSTRACT

**Cerylonidae (Coleoptera, Cucujoidea) of Pakistan.** — The following paper presents the first records of the Cerylonidae from Pakistan. One new genus — *Spinocerylon* gen. n. and 6 new species are described: *Philothermus myops*, *P. micrus*, *P. pakistanicus*; *Cerylon hazara*; *Cerylonopsis abnormis* and *Spinocerylon apterum*. Key to determination and diagnostic combinations of particular genera and species are provided. All known species from Pakistan are wingless and with strongly reduced eyes, and are fairly close to species known from North West India.

## INTRODUCTION

The family Cerylonidae (Cerylidae auct.) is a relatively small and cosmopolitan family of cucujoid beetles, which occur in both larval and adult stages in leaf litter, rotten wood and under bark. The family has not yet been adequately studied, and it seems that at least 10-15 genera and 300 species remain to be described. There is no published record on the Cerylonidae from Pakistan, and the North West India is very poorly known as well.

The present paper is based on a collection made in June 1983 by my colleagues Claude Besuchet and Ivan Löbl, whose efficient field methods enabled them to collect more than 300 specimens of Cerylonidae, representing 4 genera and 6 species. The additional 70

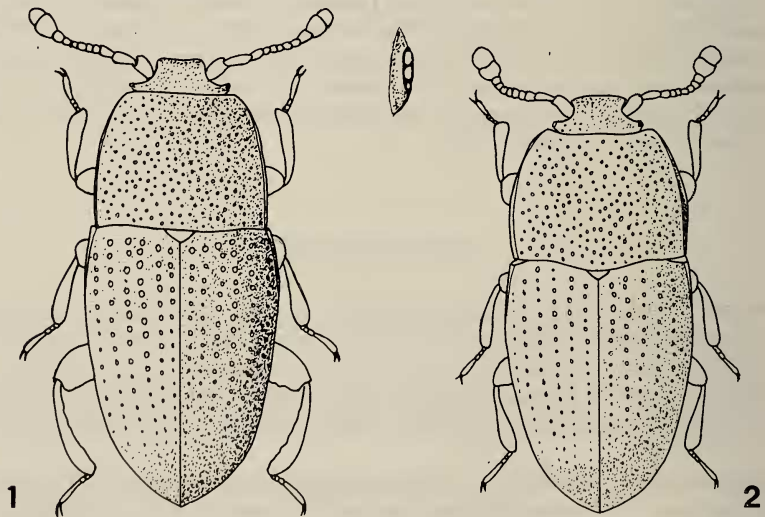
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specimens were collected in April 1984 and kindly loaned by my friend Stanislav Vit from Geneva.

The only one of four genera found in Pakistan, *Philothermus* Aubé, is of world-wide distribution, and is represented here by a group of 3 apparently related and probably endemic species, which appear to be closely related to the Oriental stock of the genus, which is abundant in Himalayan Region, and also occurs in New Guinea and Australia. *Cerylon* is represented by about 20 species restricted to the Holarctic, and it seems to represent fairly advanced evolutionary line derived from the *Philothermus* — complex in the New World. The only species, *C. hazara*, found in Pakistan is wingless and microphtalmic unlike any other species of the genus. Genus *Cerylonopsis* Heinze is represented in Pakistan by a single, very unusual species — *C. abnormis* which unlike other species of this genus, found from Japan to Australia, has procoxal cavities externally open, eyes reduced and wings absent. The fourth genus found in Pakistan, *Spinocerylon* gen. n. includes single Pakistan species *S. apterum* sp. n. and two more species described as *Cerylon* from North West India (Himahal Pradesh and Kashmir) and forms very uniform unit with no clear relation to *Cerylon-Philothermus* complex. In general, the Cerylonidae of Pakistan are apparently more Oriental than Palearctic in origin, with high degree of endemism at species level, and show fairly close affinities to the fauna of North West India.

The most of the specimens including all the holotypes are deposited in the Muséum d'Histoire naturelle in Geneva, some duplicates in the Institute of Zoology; and SV-material in the private collection of Stanislav Vit. My sincere thanks are due to my friends Ivan Löbl and Stanislav Vit who provided me with the valuable material.



FIGS 1-2.

1 — *Philothermus pakistanicus* sp. n.; 2 — *Philothermus micrus* sp. n.

## KEY TO THE GENERA AND SPECIES

1. Tarsi 3-3-3 segmented; abdominal ventrite I with short femoral lines. (*Cerylonopsis* Heinze) . . . . . *C. abnormis* sp. n.
- Tarsi 4-4-4 segmented; ventrite I without femoral lines . . . . . 2
2. Prosternal process widened apically and procoxal cavities closed externally (fig. 25) . . . . . 3
- Prosternal process parallel-sided and procoxal cavities open externally. (*Philothermus* Aubé) . . . . . 4
3. Antenna 11-segmented with 2-segmented club (Fig. 24); procoxal cavities closed internally; tegmen of aedeagus present. (*Spinocerylon* gen. n.) . . . . . *S. apterum* sp. n.
- Antenna 10-segmented with 1-segmented club (Fig. 15); procoxal cavities open internally; tegmen absent. (*Cerylon* Latreille) . . . . . *C. hazara* sp. n.
4. Body short-oval (Fig. 2); EL/EW = 1.29; male hind tibia smooth . . . . . *P. micrus* sp. n.
- Body more elongate (Fig. 1); El/EW = 1.42-1.47; male hind tibia weakly crenulate or denticulate on inner margin . . . . . 5
5. Pronotal sides more rounded (Fig. 13), pronotum widest shortly behind middle; male hind tibia as in Fig. 6; eyes absent, or reduced to a single barely traceable facet . . . . . *P. myops* sp. n.
- Pronotal sides almost straight, pronotum widest at base and slightly narrowing anteriorly (Fig. 1); male hind tibia as in Fig. 7; eye consists of 3 fairly visible facets . . . . . *P. pakistanicus* sp. n.

***Philothermus myops* sp. n.**

(Figs 3, 7, 8, 13)

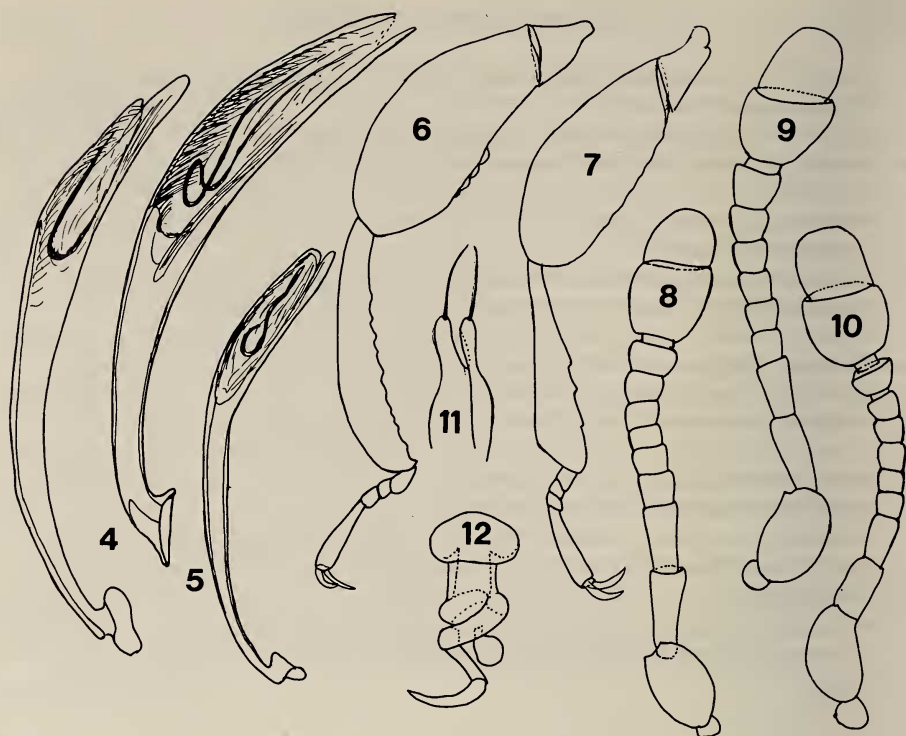
*Diagnostic combination.* Body elongate, moderately convex; colour reddish-brown; surfaces feebly shiny; vestiture contains of sparse microsetae, visible under 50× magnification. *Head* with anterior clypeal margin rounded; antenna as in Fig. 8; eyes completely absent or each with single, barely visible facet. *Prothorax* 0.87× as long as wide, widest behind middle; lateral margins visible in 4/5, the edges smooth; subbasal impressions absent; discal punctures small, about one diameter apart, interspaces feebly reticulate, shiny. *Scutellum* strongly transverse, about 0.3× as long as wide, triangular. *Elytra* about 1.47× as long as wide and 1.76× as long as pronotum, each with 7 rows of stria punctures; striae not impressed; stria punctures about 1.2-1.5 diameter apart; intervals micropunctured and reticulate; lateral margin moderately wide and visible in basal 3/5. *Aedeagus* as in Fig. 3.

Length 1.71-2.01 mm.

*Material examined:*

Holotype ♂: Pakistan, Dir, Lawari Pass, 2700 m, 21.VI.1983, leg. Besuchet and Löbl.

Paratypes: 5 ex. with same data as holotype.



FIGS 3-12.

3-5 — median lobe, ventral; 6, 7 — male hind leg; 8-10 — male antenna, dorsal; 11 — apex of tegmen; 12 — spermatheca. 3, 7, 8 — *Philothermus myops* sp. n.; 4, 6, 9 — *P. pakistanicus* sp. n.; 5, 10-12 — *P. micrus* sp. n.

***Philothermus micrus* sp. n.**

(Figs 2, 5, 10-12)

*Diagnostic combination.* Body broadly oval (Fig. 2), convex; colour reddish-brown to brown; surface feebly shiny; vestiture as in *P. myops*. *Head* with anterior clypeal margin almost straight; antenna as in Fig. 10; eyes reduced, each with 3 unpigmented, facets. *Prothorax* 0.75 × as long as wide, almost parallel-sided at basal 1/2, arcuately narrowing anteriorly; margins very narrow, visible in basal 5/6; subbasal impressions absent; discal punctures small, about 1.2-1.5 diameter apart, interspaces micropunctured and reticulate. *Scutellum* about 0.25 × as long as wide, triangular, smooth. *Elytra* 1.3-1.32 × as long as wide and 1.8 × as long as prothorax; margins narrow, barely visible in basal 1/4; each elytron with 8 rows of punctures; striae not impressed; strial punctures separated longitudinally by about 1-1.5 diameter; intervals micropunctured. Hind legs in both sexes simple. *Aedeagus* as in Figs 5, 11, spermatheca as in Fig. 12.

Length 1.6-1.8 mm.

*Material examined:*

Holotype ♂: Pakistan, Swat, above Miandam, 2300 m, 10.V.1983, leg. Besuchet and Löbl.

Paratypes: 90 ex. as holotype.

Not paratypes: Pakistan, Swat, Malam Jabba, 18.V.1983, 2500-2600 m, leg. Besuchet and Löbl; same data as holotype but 2400-2500 m, 17.V.1983 — total 170 ex.

**Philothermus pakistanicus** sp. n.

(Figs 1, 4, 6, 9)

*Diagnostic combination.* Surface reddish-brown, feebly shiny; vestiture consists of minute, sparse setae, visible under  $50\times$  magnification. *Head* with anterior clypeal margin scarcely emarginate medially, almost straight; antenna as in Fig. 9; eyes reduced and each with 3 unpigmented facets. *Pronotum*  $0.88\times$  as long as wide, widest at base and slightly converging anteriorly; lateral margin narrow and visible at basal  $5/6$ ; subbasal impressions absent; discal punctures about 1-1.5 diameter apart, interspaces feebly reticulate. *Scutellum* about  $0.35\times$  as long as wide, triangular. *Elytra*  $1.4\times$  as long as wide and  $1.7-1.75\times$  as long as pronotum; each with 7 rows of punctures, striae not impressed, strial punctures  $2-2.5\times$  as large as those on pronotum, and separated longitudinally by about one diameter. *Male* hind tibia curved inwardly and crenulate as in Fig. 6, smooth and almost straight in female. Aedeagus as in Fig. 4.

Length 1.7-1.92 mm.

*Material examined:*

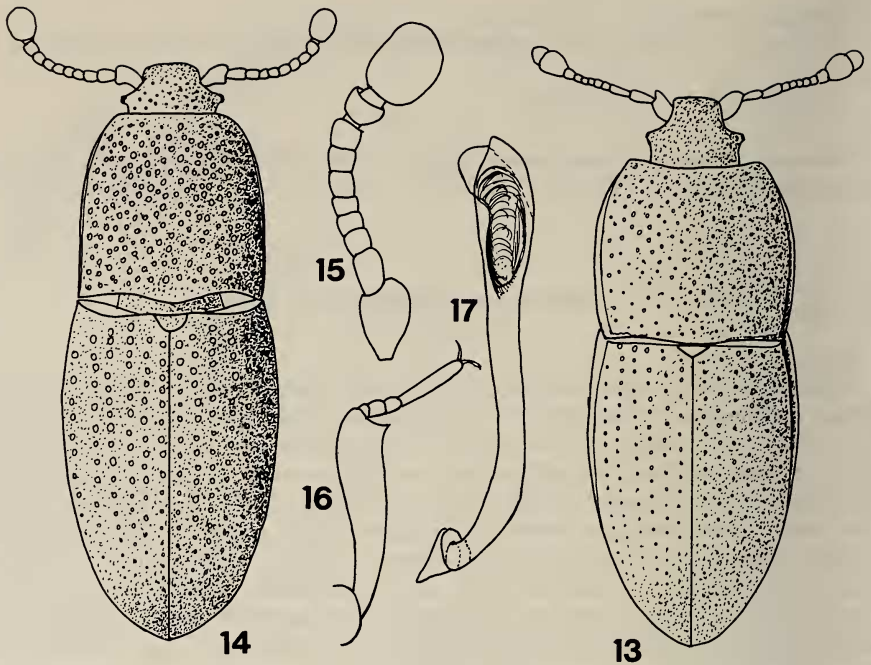
Holotype ♂: Pakistan, Hazara, Shogran, 2400 m, 3.VI.1983, leg. Besuchet and Löbl.

Paratypes: 4 ex — as in holotype; 8 ex — Hazara, Nathias Gali, 2500 m, 5.VI.1983, leg. BL; 1 ex — Chitral, Lavari Pass, 2600 m, 23.V.1983, leg. BL; 26 ex — Hazara, Dunga-Gali, 2300 m, 17.IV.1984, leg. S. Vit (SV); 1 ex — same locality and collector, but 22.IV.1984 (SV).

**Cerylon hazara** sp. n.

(Figs 14-17)

*Diagnostic combination.* Body elongate, moderately depressed; colour dark-brown; surface feebly shiny; vestiture consists of short and sparse hairs visible under  $20\times$  magnification. *Head* with anterior clypeal margin almost straight, weakly emarginate medially; eyes small, each with about 10 small facets arranged in two irregular rows; antenna as in Fig. 15. *Pronotum*  $0.96\times$  as long as wide, widest slightly before base (Fig. 14), arcuately narrowing anteriorly; margins very narrow, visible in basal  $3/4$ ; disc feebly convex, without clear subbasal impressions; discal punctures about twice as large as eye facet, slightly elongate and about 0.5 diameter apart; interspaces feebly reticulate. *Scutellum* almost as long as wide, small, pentagonal. *Elytra* about  $1.46\times$  as long as wide and  $1.7\times$  as long as pronotum; each with 7 rows of strial punctures; striae not impressed; strial punctures at base slightly larger than those of pronotum, separated longitudinally by about 0.5 diameter; intervals almost smooth. Protibia as in Fig. 16, with fine apical



FIGS 13-17.

13 — *Philothermus myops* sp. n., outline of body; 14-17 — *Cerylon hazara* sp. n., holotype male, 14 — outline of body, 15 — antenna, 16 — protibia and tarsus, 17 — median lobe, ventral.

tooth; prosternal process and cavities as in typical *Cerylon*. *Aedeagus* as in Fig. 17, median lobe  $0.9\times$  as long as abdomen.

Length 2.1 mm.

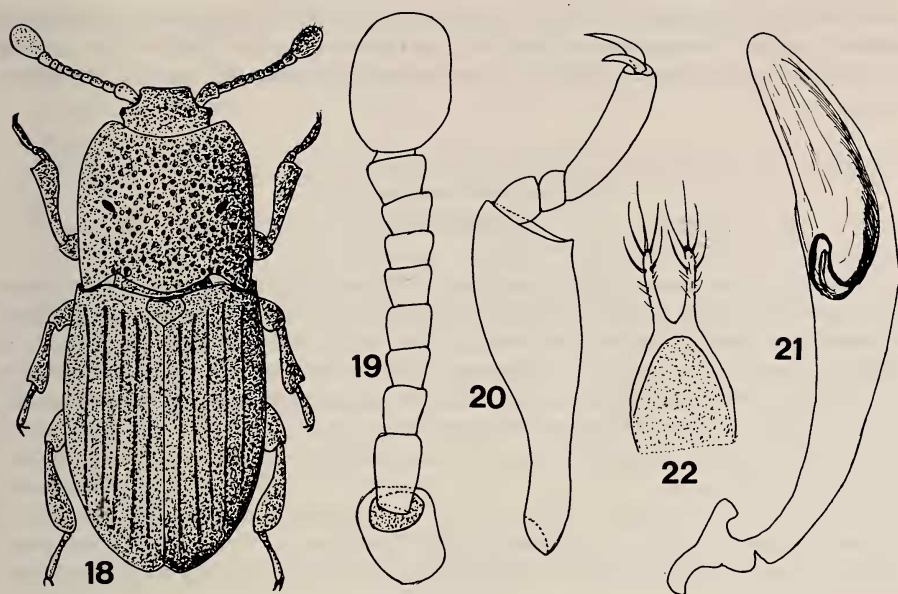
*Material examined:*

Holotype ♂: Pakistan, Hazara, Shogran, 2400 m, 3.VI.1983, leg. Besuchet and Löbl.

***Cerylonopsis abnormis* sp. n.**

(Figs 18-22)

*Diagnostic combination:* Body moderately elongate, flattened; colour dark-brown; surface shiny, smooth. *Head* with anterior clypeal margin atraight in both sexes; eyes reduced and each with about 8-10 fine, unpigmented facets arranged in two irregular rows; antenna as in Fig. 19. *Pronotum*  $0.92\times$  as long as wide with characteristic outline as in Fig. 18, with base deeply emarginate before hind angles and the subbasal impressions absent; discal punctures about  $2\times$  as large as facets, coarse, and about 1 diameter apart; interspaces micropunctured. *Scutellum* large, about  $0.5\times$  as long as wide, triangular. *Elytra*  $1.37\times$  as long as wide and  $1.36\times$  as long as pronotum; each with 5 feebly impressed striae, strial punctures fairly visible, and striae sometimes incomplete. *Venter*



FIGS 18-22.

*Cerylonopsis abnormis* sp. n., male: 18 — dorsal side, 19 — antenna, ventral; 20 — protibia; 21 — median lobe, dorsal; 22 — tegminal apex.

coarsely punctured; ventrite I with short, parallel, femoral lines; procoxal cavities narrowly open behind; prosternal process moderately widened apically. Protibia with apical tooth (Fig. 20). *Aedeagus* as in Fig. 21, 22, median lobe  $0.8\times$  as long as abdomen.

Length 1.8-1.9 mm.

*Material examined:*

Holotype: Pakistan, Chitral, Lawari Pass, 2600 m, 23.V.1983, leg. Besuchet and Löbl.

Paratypes: 11 ex — with same data as holotype.

**Spinocerylon** gen. n.

*Type species: Spinocerylon apterum* sp. n.

*Gender:* neuter.

*Etymology:* the name should be considered as an arbitrary combination of letters combined with the classical name *Cerylon*.

Other species included: *Cerylon wittmeri* Šlipiński, 1981 and *Cerylon mirabilis* Šlipiński, 1982, *comb. n.*

*Diagnostic combination.*

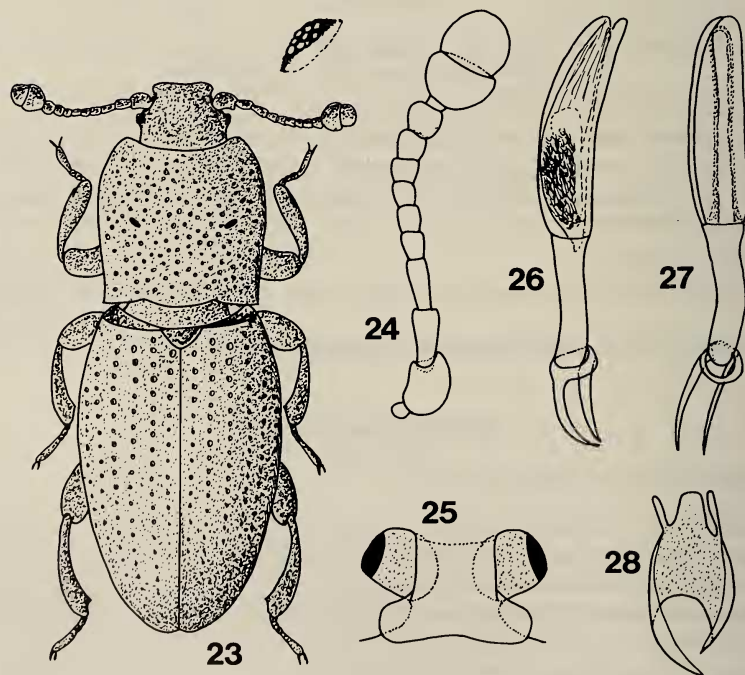
This genus is very similar to *Philothermus* Aubé having the antennae 11-segmented with clear 2-segmented club and the aedeagus with well developed tegmen. The only important differences between those two genera are the procoxal cavities closed internally

and externally in *Spinocerylon* and the prosternal process in the last genus being wide and expanded apically. *Spinocerylon* differs from all known species of *Cerylon* Latr. having the procoxal cavities internally closed, antennal club 2-segmented and well developed tegmen.

***Spinocerylon apterum* sp. n.**

(Figs 23-28)

*Diagnostic combination.* Body elongate, flattened; colour brown; surface feebly shiny; vestiture consists of sparse and short setae, visible under  $50\times$  magnification. *Head* with anterior clypeal margin rounded in both sexes; eyes reduced and each with about 10 small facets; antenna as in Fig. 24. *Pronotum*  $1.02\times$  as long as wide, widest at anterior  $1/3$  and more strongly narrowing basally than towards anterior margin; margins narrow, visible in basal  $1/3$ ; subbasal impressions absent; discal punctures moderately large, about  $2-3\times$  as large as facets, separated by less than one diameter, usually by  $0.5-0.7$  diameter; interspaces feebly reticulate. *Scutellum* large, about  $0.5\times$  as long as wide, pentagonal, smooth. *Elytra*  $1.65\times$  as long as wide and  $1.93\times$  as long as pronotum; each with 6 rows of stria punctures, striae not impressed; stria punctures as large as pronotal ones, separated longitudinally by about  $0.5-0.8$  diameter. *Venter.* Procoxal cavities and proster-



Figs 23-28.

*Spinocerylon apterum* gen. sp. n., male: 23 — dorsal side, 24 — antenna, 25 — prosternal process and cavities; 26-27 — median lobe, dorsal (26) and lateral (27), 28 — tegmen.



nal process as in Fig. 25. Ventrite I without femotal lines. *Aedeagus* with median lobe as in Figs 26, 27, which is about  $0.6\times$  as long as abdomen, and tegmen as in Fig. 28. Male mid- and hindtibiae slightly curved inward and with short subapical spine (Fig. 23).

Length 2.2-2.4 mm.

*Material examined:*

Holotype  $\sigma$ : Pakistan, Hazara, Nathias Gali, 2500 m, 5.VI.1983, leg. Besuchet and Löbl.

Paratypes: 15 ex-with same data as holotype; 6 ex — Hazara, Murree, 2100 m, 5.VI.1983, leg. BL; 3 ex — as holotype, but 2300 m, 17-22.IV.1984, leg. S. Vit (SV); 23 ex — Hazara, Dunga Gali, 2300 m, 17.IV.1984, leg. SV; 11 — Hazara, Changla-Gali, 2500 m, 17.IV.1984, leg. SV; 1 ex — Punjab, Murree, 1950 m, 25.IV.1984, leg. SV.

This species may be distinguished from *S. wittmeri* (Ślip.) by the elytra with 6 instead of 4 rows of punctures, which are much more coarse in *S. wittmeri*. Unlike *S. mirabile* (Ślip.) the eyes are much smaller and each consists of 10 facets only in *S. apterum*.

#### REFERENCES

- ŚLIPIŃSKI, S. A. 1981. Studies on the Cerylonidae (Coleoptera, Clavicornia). Part III. On the Cerylonini from the Himalaya. *Entom. Basiliensia*, 6: 427-436.
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